

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated in the listing of claims below. This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): A method of determining the structural data of a prototype for a lightweight technical structure, comprising the method steps:

- a. preparing the relevant basic parameters of the technical ~~light-weight~~ lightweight structure to be produced with respect to the technical problem;
- b. preselecting one or more bio-mineralized unicellular organisms with natural shell architectures suitable for the prepared parameters;
- c. selecting one or more fine structures of the preselected shell architectures most promising for a technical realization;
- d. directly copying the structural data from the selected fine structures;
- e. scaling the copied structural data to the basic parameters of the lightweight technical structure to be produced;
- f. combining and adapting the scaled structural data to a set of prototype data for a prototype for the lightweight technical structure to be produced; and
- g. optimizing the prototype using a processor operating with optimization software.

Claim 2 (original): The method of claim 1 including storing common descriptive properties of lightweight technical structures and shell architectures of bio-mineralized unicellular organisms as an organized collection of aspects and aspect values in a data base.

Claim 3 (previously presented): The method of claim 2 including storing a hierarchy of individual structural elements, greater subgroups and complete shell architectures of bio-

mineralized unicellular organisms characterized by their known properties as an organized collection in a data base.

Claim 4 (previously presented): The method of claim 3 including direct copying of the structural data of the selected fine structures or substructures by at least semi-automatic scanning with a microscope.

Claim 5 (previously presented): The method of claim 4, including storing of the directly copies structural data as an organized collection in a data base.

Claim 6 (previously presented): The method of claim 5, including storing criteria for the scaling, the combining and the adapting of the structural data, of prototypes and their optimization results as an organized collection in a data base.

Claim 7 (previously presented): The method of claim 1, wherein one of arachnoidiscus and coscinodiscus from the genera of diatoms is preselected as bio-mineralized unicellular organisms.

Claim 8 (previously presented): The method of claim 1, wherein phaeodaria from the genera of radiolaria are preselected as bio-mineralized unicellular organisms.

Claim 9 (withdrawn): A prototype for a lightweight rim (LF) for an automotive vehicle with an inner rim body (FK) mountable at one side to an axle and with an outer rim bed (FB) connected thereto, with the rim body (FK) being provided with a supporting spoke structure (SA) and produced by a method for determining the structural data of a prototype for a lightweight technical structure, characterized by a highly symmetric formation of the spoke structure (SA) of a plurality of rib-like radial spokes (RAS) having a high aspect ration of width to depth and a plurality of annular spokes(RIS), with each of several radial spokes (RAS) extending from the rim bed (FB) over only one third of the rim body (FB) and terminating at an annular spoke (RIS).

Claim 10 (withdrawn): The prototype of claim 9, characterized by a lower aspect ratio of the annular spokes (RIS) relative to the aspect ration of the radial spokes (RAS), the annular spokes (RIS) extending flush or substantially flush with the radial spokes (RAS) at the front face.

Claim 11 (withdrawn): The prototype of claim 10, characterized by 16 radial spokes (RAS) and 6 annular spokes (RIS) every other radial spoke (RAS) extending from the rim bed (FB) to the second annular spoke (RIS) only.

Claim 12 (withdrawn): The prototype of claim 11, characterized by roundings (AB) between the radial spokes (RAS) in the direction of the rim bed (FB).

Claim 13 (withdrawn): The prototype of claim 12, characterized by a concentric circular disc (KP) in the section of the axle mount of the rim body (FK) and into which the radial spokes (RAS) extend.

Claim 14 (new): The method of claim 1, wherein the structural data is provided by a scanning microscope.

Claim 15 (new): The method of claim 1, wherein the directly copying includes converting the structural data into a three-dimensional model using at least one of a computer aided design (CAD) program and a finite element (FE) program.

Claim 16 (new): The method of claim 1, wherein the optimization software includes an FE program.

Claim 17 (new): The method of claim 1, further comprising the step of:

- h. manufacturing the prototype of the lightweight structure.